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Amendment and Response

Applicant: Scott D. Sturgeon et al.
Serial No.: 10/035,588
Filed: October 18, 2001
Docket No.: 10001084-1

Title: REPLACEABLE INK CONTAINER FOR AN INKJET PRINTING SYSTEM

urging the ink container toward the receiving station wherein each of the pair of guide rails guide the replaceable ink container linearly toward a back wall of the receiving station to align the engagement feature with the corresponding engagement features.

REMARKS

This Amendment is responsive to the Non-Final Office Action mailed April 4, 2003, in which claims 1-11 and 13-18 were rejected, and claims 5, 6, 12, 15, and 16 were objected to. With this Response, claims 1, 6, 12, 15, and 16 have been amended. Claims 1-18 remain pending in the application and are presented for reconsideration and allowance.

Amendments to the Specification

Several amendments to the specification are presented herein to correct minor errors. The amendments to the specification do not add any new subject matter, and acceptance of the amendments to the specification is respectfully requested.

Objections to the Claims

Claims 5, 6, 12, 15, and 16 were objected to because of various informalities. The objections to the claims have been addressed as described below.

Claim 5 was objected to because the recitation "second guide feature" on line 1 was found to be confusing, because a "first guide feature" has not been recited. Claim 1 (from which claim 5 depends) has been amended to recite a "first guide feature", thereby making the "second guide feature" of claim 5 clear.

Claim 16 was objected to for reasons similar to the objection to claim 5. Claim 16 has been amended to remove the term "second" and clarify that the pair of features are "guide rail engagement features".

Claim 6 was objected to because the recitation "the guide features" on line 4 lacks antecedent basis. Claim 6 has been amended to alter its dependency from claim 1 to claim 5, such that proper antecedent basis is now present for "the guide features". The language of Claim 6 has also been amended to clarify the claimed subject matter.

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Claim 12 was objected to because the recitation “a guide slot” on line 2 should read --at least one guide slot-- to avoid inconsistent language. Claim 12 has been so amended as suggested by the Examiner.

Claim 15 was objected to because the recitation “the receiving station” on line 2, and “the leading edge” on line 4 lack proper antecedent basis. Claim 15 has been amended to provide proper antecedent basis for both elements. Further, as suggested by the Examiner, the phrase --of the replaceable ink container-- has been inserted after “edge” on line 4.

With the above amendments, withdrawal of the objections to Claims 5, 6, 12, 15, and 16 is respectfully requested.

Claim Rejections under 35 U.S.C. § 102

Claims 1-3, 5-7, 15 and 17 were rejected under 35 U.S.C. §102(e) as being anticipated by Morita et al. (U.S. Patent No. 6,390,601). Morita et al. is said to disclose in Figures 7, 9b, 9d, 9f, 12 and 18 an ink jet recording apparatus as claimed in the present application.

With respect to independent claim 1, Morita et al. is said to disclose an ink jet recording apparatus comprising a guide feature (33a, 33b) outwardly extending therefrom, the guide feature disposed toward a trailing end relative to an insertion direction (Figure 9b), wherein the guide feature (33a, 33b) is configured to cooperate with the at least one guide slot (38a, 38b) to guide the ink container (30) in a pivot motion to ensure the ink container engages the inherent compliant seal forming a seal therewith (Figure 9d).

The Examiner further details how the subject matter of claims 2, 3, and 5-7, which depend from amended independent claim 1, are anticipated by Morita et al.

Amended independent claim 1 is directed to an ink container to be received within a receiving station of an inkjet printing system. The receiving station has a fluid inlet having a compliant seal and a pair of guide slots extending on along either side of the fluid inlet. The ink container comprises a first guide feature outwardly extending therefrom. The first guide feature is disposed toward a trailing end relative to an insertion direction. The first guide feature is configured to cooperate with the at least one guide

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slot to guide the ink container in a pivot motion to ensure the ink container engages the compliant seal forming a seal therewith.

It is respectfully submitted that Morita et al. does not anticipate subject matter of amended independent claim 1. In particular, the pawls 33a, 33b of Morita et al. are positioned adjacent a leading end, and not a trailing end of ink tank 30, relative to an insertion direction of ink tank 30, as evidenced by the arrow (unnumbered) in Figures 7 and 9b. Rather, it is pawls 34a, 34b of Morita et al. which are disposed toward a trailing end relative to an insertion direction. However, as clearly stated at Column 9, Lines 1- 4 of Morita et al., ink tank 30 is rotated or pivoted about pawls 33a, 33b adjacent the leading edge of the ink tank. Thus, Morita et al. does not show, teach or suggest a first guide feature disposed toward a trailing end relative to an insertion direction, wherein the first guide feature is configured to cooperate with the at least one guide slot to guide the ink container in a pivot motion to ensure the ink container engages the compliant seal forming a seal therewith.

Accordingly, for at least the reasons provided, Morita et al. does not anticipate the subject matter of amended independent claim 1, and withdrawal of the rejection of claim 1 under 35 U.S.C. §102(e) as being anticipated by Morita et al. is respectfully requested.

Claims 2, 3, and 5-7, depend, either directly or indirectly, from amended independent claim 1. Because claim 1 is not anticipated by Morita et al., the claims depending therefrom are also not anticipated by Morita et al. Accordingly, withdrawal of the rejection of claims 2, 3, and 5-7 under 35 U.S.C. §102(e) as being anticipated by Morita et al. is respectfully requested.

With respect to independent claim 15, Morita et al. is said to disclose an ink jet recording apparatus comprising a fluid outlet (45c, 45m, 45y or 45) configured for connection to the fluid inlet associated with the receiving (46 or 86; Figures 17-18) and a guide slot engagement feature (34a, 34b) disposed toward a trailing end of the replaceable ink container (30) relative to an insertion direction, wherein the engagement features 33a, 33b disposed on the leading edge engaged with corresponding engagement features (88a, 88b) associated with the receiving station (86) and with the guide slot engagement feature (34a, 34b) is so disposed and arranged on the replaceable ink container to interact with at least one of the pair of guide slots (89a, 89b) to guide the replaceable ink container (40)

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into the receiving station (86) to align the fluid outlet (45) with the fluid inlet and to engage the compliant seal to establish an inherent seal between the replaceable ink container and the compliant seal (Figure 17-18).

Amended independent claim 15 is directed to a replaceable ink container to be received within a receiving station of an inkjet printing system for providing ink to the inkjet printing system. The receiving station has a fluid inlet having a compliant seal and a pair of guide slots extending along either side of the fluid inlet. An engagement feature is disposed on a leading edge of the replaceable ink container. The engagement feature is configured to engage corresponding engagement features associated with the receiving station. The replaceable ink container comprises a fluid outlet configured for connection to the fluid inlet associated with the receiving station. The replaceable ink container further comprises a guide slot engagement feature disposed toward a trailing end of the replaceable ink container relative to an insertion direction. When the engagement feature disposed on the leading edge of the replaceable ink container is engaged with the corresponding engagement features associated with the receiving station, the guide slot engagement feature is so disposed and arranged on the replaceable ink container to interact with at least one of the pair of guide slots to guide the replaceable ink container into the receiving station to align the fluid outlet with the fluid inlet and to engage the compliant seal to establish a seal between the replaceable ink container and compliant seal.

It is respectfully submitted that the subject matter of amended independent claim 15 is not anticipated by Morita et al. Specifically, Morita et al. does not show, teach or suggest an engagement feature **disposed on a leading edge** of the replaceable ink container. As illustrated by the movement arrows (unnumbered) in Figures 17 and 18 of Morita et al., the leading edge of ink tank 30 is that edge of the ink tank 30 which includes fluid outlets 45c, 45m, 45y, 45. Clearly, pawls 33a, 33b (which the Examiner characterizes as engagement features) are not on the leading edge of the ink container 30. Rather, Pawls 33a, 33b are on a side (relative to the insertion direction) of ink tank 30.

Accordingly, for at least the reasons provided, Morita et al. does not anticipate the subject matter of amended independent claim 15, and withdrawal of the rejection of claim 15 under 35 U.S.C. §102(e) as being anticipated by Morita et al. is respectfully requested.

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With respect to independent claim 17, the Examiner found the method steps of the claim to be inherently taught in the apparatus limitations as detailed in the Office Action. Claim 17 claims a method for inserting a replaceable ink container into a receiving station of an ink jet printing system. The receiving station is disposed on a scanning carriage and fluidically coupled to an ink ejection portion mounted thereon. The method for inserting the ink container comprises engaging an engagement feature on a leading edge of the replaceable ink container with corresponding engagement features associated with the receiving station. The method further comprises engaging a pair of outwardly extending guide features disposed toward a trailing end of the ink container, and then urging the ink container toward the receiving station wherein each of the pair of guide features guide the replaceable ink container along an arc about a pivot axis toward a bottom surface of the receiving station to align a fluid outlet on the replaceable ink container with a compliant sealing structure about a fluid inlet to form a seal with the fluid outlet.

As discussed above with respect to amended independent claim 15, the ink container 30 of Morita et al. does not have an engagement feature **on a leading edge** of the replaceable ink container for engagement with a corresponding engagement feature associated with the receiving station. Rather, the engagement features of Morita et al. (pawl 33a, 33b) are on a side surface of the ink container 30. Accordingly, Morita et al. does not and can not show, teach or suggest “engaging an engagement feature **on a leading edge** of the replaceable ink container with a corresponding engagement feature associated with the receiving station”.

In addition, Morita et al. does not show, teach or suggest engaging a pair of outwardly extending guide features disposed toward a trailing end of the ink container, wherein each of the pair of guide features guide the replaceable ink container along an arc about a pivot axis toward a bottom surface of the receiving station. In Morita et al., the pawls 34a, 34b (characterized by the Examiner as guide slot engagement features) engage slots 89a, 89b before ink tank 30 is rotated into position. However, immediately upon initiation of rotation of ink tank 30, pawls 34a, 34b are disengaged from slots 89a, 89b. Therefore, pawls 34a, 34b cannot be said to “guide the replaceable ink container along an arc about a pivot axis” as is required by independent claim 17.

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Accordingly, for at least the reasons provided, Morita et al. does not anticipate the subject matter of independent claim 17, and withdrawal of the rejection of claim 17 under 35 U.S.C. §102(e) as being anticipated by Morita et al. is respectfully requested.

Claims 8-11 and 13-14 were rejected under 35 U.S.C. §102(b) as being anticipated by Sasaki (U.S. patent no. 5,815,183).

With respect to independent claim 8, Sasaki is said to disclose an ink container housing 60 defining a leading end and a trailing end relative to an insertion direction and a pair of side walls each extending between the leading and trailing ends (Figure 8). Sasaki is further said to disclose a first pair of guide features 62, each of the first pair extending outwardly from each of the pair of side walls (Figure 8). Sasaki is further said to disclose a second pair of guide features 63a, each of the second pair extending outwardly from each of the pair of side walls (Figure 8).

The Examiner further details how Sasaki anticipates the subject matter of dependent claims 9-11 and 13-14.

Independent claim 8 claims an ink container for insertion into an ink jet printing system. The ink container comprises an ink container housing defining a leading end and a trailing end relative to an insertion direction and a pair of side walls each extending between the leading and trailing ends. The ink container further comprises a first pair of guide features, each of the first pair extending outwardly from each of the pair of side walls. The ink container further comprises a second pair of guide features, each of the second pair extending outwardly from each of the pair of side walls.

Sasaki does not show, teach or suggest an ink container as claimed in independent claim 8. In Figure 8, Sasaki shows a carriage body 60 having guide portions 62 provided on right and left outer surfaces of the carriage body 60, and operation portions 63 provided on front end rear surfaces of the carriage body 60 (Column 7, Lines 51-62). That is, Sasaki shows guide portions 62 on a first pair of side walls (right and left outer surfaces of the carriage body 60) and operation portions 63 on a second (different) pair of side walls (front and rear outer surfaces of carriage body 60). Claim 8 of the present application clearly specifies a pair of side walls each extending between the leading and trailing ends, where the first pair and second pair of guide features extend outwardly from each of the pair of side walls. That is, the ink container of claim 8 has the first pair of

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guide features and the second pair of guide features extending outwardly from **the same pair of side walls**. This is in contrast to Sasaki et al., in which the guide portions 62 and operation portions 63 extend from different pairs of side walls.

Accordingly, for at least the reasons provided, Sasaki does not anticipate the subject matter of independent claim 8, and withdrawal of the rejection of claim 8 under 35 U.S.C. §102(b) as being anticipated by Sasaki is respectfully requested.

Claims 9-11 and 13-14 depend, either directly or indirectly, from independent claim 8. Because claim 8 is not anticipated by Sasaki, the claims depending therefrom are also not anticipated by Sasaki. Accordingly, withdrawal of the rejection of claims 9-11 and 13-14 under 35 U.S.C. §102(b) as being anticipated by Sasaki is respectfully requested.

Claim Rejections under 35 U.S.C. § 103

Claims 16 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Morita et al. in view of Nozawa et al. (U.S. Patent No. 6,102,533).

Morita et al. is said to disclose the basic features of the claimed invention as described above, but does not disclose the receiving station having a guide rail and wherein the replaceable ink container further includes a second pair of guide features configured to engage the guide rail to guide the ink container into the receiving station. Nozawa et al. is said to remedy the deficiencies of Morita et al. by disclosing in Figures 1-4 an ink container using an ink jet recording apparatus comprising the receiving station 300 having a guide rail 310a, wherein the replaceable ink container 400 further includes a second pair of guide features 404 that are configured to engage the guide rail 310a to guide the ink container into the receiving station 300 (Column 12, Lines 42-59). The Examiner finds it would have been obvious at the time the invention was made to incorporate the teaching of Nozawa et al. into the Morita et al. ink jet recording apparatus for the purpose of guiding an insertion direction of the ink container into a holder.

Claims 16 and 18 depend from independent claims 15 and 17, respectively. Independent claims 15 and 17 are in allowable condition for the reasons presented above. Accordingly, dependent claims 16 and 18 are also in allowable condition. Therefore,

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withdrawal of the rejection of claims 16 and 18 under 35 U.S.C. §103(a) as being unpatentable over Morita et al. in view of Nozawa et al. is respectfully requested.

Allowable Subject Matter

Claim 12 was indicated to be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. The Examiner found the claim to be allowable because none of the prior art references of record disclose the receiving station comprising at least one guide slot and wherein the second pair of guide features is configured to engage the at least one guide slot to guide the ink container in a pivot motion so that the ink container engages a compliant seal on the receiving station in the combination as claimed.

The Applicant acknowledges and thanks the Examiner for indication that claim 12 would be allowable if rewritten as suggested. However, at this time the Applicant declines to rewrite claim 12 in independent form, as the independent claim from which claim 12 depends is in allowable condition for the reasons discussed above.

CONCLUSION

In light of the above, Applicant believes independent claims 1, 8, 15, and 17, and the claims depending therefrom are in allowable condition. Allowance of these claims is respectfully requested.

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Any inquiry regarding this Amendment and Response should be directed to either Matthew B. McNutt at Telephone No. (512) 231-0531, Facsimile No. (512) 231-0540, or Kevin B. Sullivan at Telephone No. (858) 655-5228, Facsimile No. (858) 655-5859. In addition, all correspondence should continue to be directed to the following address:

Hewlett-Packard Development Company, L.P.
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

Respectfully submitted,

Scott D. Sturgeon et al.,

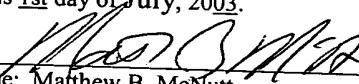
By their attorneys,

DICKE, BILLIG & CZAJA, PLLC
Fifth Street Towers, Suite 2250
100 South Fifth Street
Minneapolis, MN 55402
Telephone: (612) 573-2000
Facsimile: (612) 573-2005

Date: July 1, 2003
MBM:dmd


Matthew B. McNutt
Reg. No. 39,766

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